


One or more piezoelectric units are attached to an anti-nodal point or points on the opposite face of the board structure from the said sound absorption member. The piezoelectric unit comprises a piezoelectric member and a tunable shunt circuit for passive dissipation of board vibration and resultant sound.

The structure is significantly different in construction and function from the prior art multiple parallel connected shunt circuits of Wu for passively dissipating multiple frequency modes to suppress vibration of a surface to which the piezoelectric member patch is attached, and from the active control of the constrained structurally active visco-elastic damping layer of Baz in which the strain is actively adjusted to dissipate vibration.

Wu is silent regarding locations at which the piezo-electric member may be attached and Baz concerns a three layer active device in which the center layer of visco-elastic material is covered on each surface by piezo-electric member so that one piezo layer can sense vibrations and the other can produce a signal based on the sensed vibrations to control the expansion or contraction of the visco-elastic layer. Neither Wu or Baz teaches applicant's entire panel with a sound absorbing layer on one side of the vibrating member and an independently functioning passive piezoelectric unit on the other so that vibrations may be damped by these separately and independently functioning components over a wide range of frequencies. Applicant's sound absorption member is

in contact with one face surface of the vibrating member and need not be made of structurally functioning material such as the visco-elastic material required in Baz which does not contact the vibrating member.

Respectfully submitted,



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